Review: Colonization of intermittent dry shores of rivers and lakes by terrestrial vegetation

When water levels drop, be it naturally during dry periods or due to management activities, previously wet sediment is exposed to the air. Recent publications have shown that dry sediments of lakes, ponds and rivers emit considerable amounts of greenhouse gases. The emission intensities measured from drying sediment are often higher than the emissions from the wet part of the water system. Notably, however, the emissions from the dryzones are quantified at bare spots, i.e. without vegetation. In reality, however, a considerable share of the intermittent dry zone can be vegetated. In the vegetated areas, greenhouse gas emissions may be off-set by CO2 uptake by the plants. We know very little about the fraction of dry zones that is vegetated, the amount of biomass accumulated during the low-water period and how this varies among systems and across climate zones. For this review you will gather information about colonization rates of terrestrial plants in intermittent dry zones and compare methods that are used to estimate coverage and primary production and compare this with known greenhouse gas emission rates. Depending on your interest and the available literature you may focus on individual systems or use a more regional or global approach. Ultimately you may be able to answer the question 'Are terrestrial plants in intermittent dry-zones off-setting greenhouse gas emissions?'.

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